CASE STUDY

**Merging Information Technology and Cultures
at Compaq-Digital**

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Title: Merging Information Technology and Cultures at Compaq-Digital

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Abstract: Compaq Computer Corporation and Digital Equipment Corporation formally joined forces on June 11, 1998, creating a $37 billion (US) personal computer and computing services firm. The merger was expected to generate synergies that would lead to cost take-out and cross-selling opportunities. In order to generate these benefits, however, management of the combined firm would have to overcome the challenges presented by two very different management styles, cultures, organizational forms, and technology infrastructures. This case describes the challenges from the perspective of the two firms' IT units. It explains how IT leaders from the two firms cooperated to deliver an ambitious set of Day One goals, and how they worked through ongoing challenges during the eight months immediately following the merger. It offers lessons about the role of technology in facilitating merger-induced organizational changes and serves as a reminder of the importance of strategic direction in setting the IT agenda.

22 Pages

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Merging Information Technology and Cultures at Compaq-Digital (A):
Meeting Day One Objectives

On June 11, 1998, stockholders of Digital Equipment Corporation approved its acquisition by Compaq Computer Corporation, creating a $37 billion (US) personal computer and computing services firm. Within an hour of the stockholder vote, the more than 100,000 employees of the new Compaq were able to access a single e-mail directory via a corporate network that linked its world-wide sites. The IT units of the individual firms had banded together to successfully deliver their Day One objectives:

> There wasn't a whole lot of time to decide who was going to make what decision. As a team we marched off to figure out how we were going to get the networks to talk together even though they weren't the same technology. We figured out how to share mail, messaging—that kind of thing. It just had to happen pretty quickly. So we had a common task that we both went after.
> —*Fred Jones, Vice President, Information Services, Compaq*

Experts inside and outside the firm recognized that the Compaq-Digital merger created a firm that could rival Hewlett-Packard and even IBM. But in order to leverage the potential synergies, Compaq's management team would need to overcome the challenges posed by the two firms' very different business models and cultures.

Company Backgrounds

Established in 1957, Digital Equipment Corporation introduced minicomputers to corporate computing environments. As minicomputers encouraged greater distribution of computer processing in organizations, Digital rose to become the world's second-largest computer maker in the mid-1980s. Headquartered in Maynard, Massachusetts, USA, Digital flourished under a highly distributed structure that encouraged innovativeness and consensus decision-making. In 1997 the company had over 1100 sales, production, and service sites world-wide, of which 400 were in the U.S.

In the 1990s, management underestimated the importance of microcomputers in business, and the firm sank to a weak fourth among US computer manufacturers. Management responded by shifting business focus from computer manufacturing to computing services. In 1997 Digital had revenues of $13 billion, almost half of which were generated by its services business. More than 22,000 of its 70,000 employees were service business employees. At the time of the merger the firm was the third largest provider of corporate computer services after IBM and Electronic Data Systems (EDS). In 1998, as it was about to merge with Compaq, Digital's profits exceeded $1.3 billion.

Compaq Computer Corporation was created in 1982 to clone and sell personal computers. By 1997 the company had three primary lines of business: (1) consumer PCs, (2) commercial PCs, and (3) enterprise PC servers. Compaq was highly centralized with almost half of its 40,000 employees located at its wooded campus in Houston, Texas, USA. The company had been growing through geographic expansion and by the end of 1997, 40% of its $25 billion in revenues were generated outside North America.

Compaq's competitive niche was as a high-volume, low-cost manufacturer. Compaq had no services organization; its primary business model was to ship fairly standard products in large volumes to channel partners who configured them for their end-customers. In North America, for example, 90% of its sales were with 35 partners. Its chief competitor, Dell Corporation, was moving the industry to a build-to-order model. Consequently, one of Compaq's key challenges was to transform its business model so that it could build and ship computers according to customer specifications for an order placed via the Web.

Compaq's CEO Eckhard Pfeiffer, announced early in 1997 that he wanted to double its sales revenues to $50 billion by 2000. Towards that end, Compaq first acquired two small technology firms. Then in mid-1997, Compaq announced its intentions to purchase Tandem Computer Corporation, a $2 billion manufacturer of large, customized computer systems. Wildly successful in the eighties, Tandem had fallen on hard times. By the end of 1997, the Tandem deal was complete, and Compaq turned its attention to an even bigger acquisition.

Announcement of the Merger

Compaq announced its intention to buy Digital on January 26, 1998. To most employees in the two firms, the news came as a surprise:

> The date the official announcement was made it just floored us all. If you have been in this industry for a long time, like I have, IBM and Digital are the icons of the computer industry—forever and ever. This was a company that is a legend in our industry. This is Ken Olsen. This is the big red building in Maynard.
> —*Ed Pennington, Director, Corporate Administrative Systems*

Compaq management explained to investors that the benefits of the acquisition stemmed largely from the synergies of merging Compaq's personal computer and server manufacturing business with Digital's computing services business. Specifically, it would lead to (1) cost take-out by eliminating redundancies in computer manufacturing capabilities and (2) cross-selling opportunities through the merger of the firms' customer bases worldwide. The deal was to be accretive within one year, meaning that Compaq would have incurred all merger-related costs and the benefits would start to accrue.

It was clear to insiders and outsiders alike that this would not be an easy merger. Although the two firms were in the same industry, in practice they had very little in common. For example, Compaq manufactured to replenish inventory; Digital manufactured to order. Compaq had a single level Bill of Materials; Digital had a ten-level nested Bill of Materials. Compaq was organized around geography; Digital was organized globally around line of business. Compaq was a warranty business using partners to take care of the customer; Digital was a contract business with a large internal customer service staff. Digital's high end server and PC business was largely an enterprise account focus.

In addition, the two companies had very different management styles. Compaq was well-known for its rapid decision-making culture. Management would make a decision, stick to it, and go with it "life or death." Outsiders referred to it as a Texas cowboy culture. Digital had a consensus approach to

management. Decisions were often made by committee. Rick Fricchione, a veteran Digital IS manager, described the difference:

> Compaq rewarded quick decisions and heroics to make them happen. Sometimes this worked just fine. Other times the chewing gum in the hole dried out and you found yourself back in the same position (or worse). Digital tried to find systemic solutions. When we shot something, it died. It was thorough, but much slower. Compaq was probably more successful in hitting the market window for something, but at a cost of very fragile business systems.

—Rick Fricchione, Vice President,
Advanced Information Technology and Planning

Pre-Merger IM Integration Efforts

Although the initial announcement of the acquisition suggested that Compaq might manage Digital as a separate strategic business unit, the Board soon articulated its intention to create a new integrated computer company that would deliver enterprise-wide IT solutions with the efficiency of a PC company. Both firms established an Integration Office that reported to their respective Executive Committees. The two firms' Integration Offices had parallel Integration Teams for each of their key functions: finance/administration, services, human resources, manufacturing, sales & marketing, and information management.

Executives of the Information Management (IM) organizations at the two firms recognized that IM would play a critical role in the transformation from two independent companies into a single, integrated firm.[1] In addition to the two CIOs, the IM integration teams at both firms were led by two CIO-reports with broad responsibility for IT infrastructure: Mike Baker and Fred Jones at Compaq, Tom Simmons and Rick Fricchione at Digital. (See Exhibit A-1 for the Integration Team structure.)

The IM integration team worked towards integration of the two firms' IM units. This was in marked contrast to the integration plan for the earlier Tandem acquisition. Tandem was operating as a subsidiary and Compaq's CIO had issued four directives to Tandem IM management: (1) convert Tandem's proprietary email system to Microsoft Exchange and integrate with Compaq's email system; (2) convert to Compaq's telecommunications system; (3) abandon Oracle financial systems and implement SAP; and (4) implement the same manufacturing systems as Compaq. Tandem IM managers were frustrated by the initial lack of integration and were pleased when eventually the Tandem unit was also merged into the new Compaq organization:

> Nothing was getting replaced; nothing was getting merged because there was too much independent thought going on. So having the groups become one—all of the financial programmer analysts and management from the Tandem side getting merged in and working directly for the same functional IM group in Houston—finally let us stop continually modifying those separate solutions and start toward one solution.

—CIO, Tandem

The immediate integration of the Compaq and Digital units averted similar frustrations, but it involved combining units with very different structures and operating styles. Digital had a federated IT

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[1] Compaq's IT unit was called Information Management. Digital's IT unit was called Information Systems. Fred Jones, who headed up infrastructure responsibilities for Compaq, had the title Vice President for Information Services.

organization structure in which business units owned their applications but infrastructure was under the control of CIO Dick Fishburn. Prior to Fishburn's arrival as Digital's first CIO, IT had been the purview of the individual business units. Fishburn created a single IT organization, but left the money in the business units so that the corporate IT budget was defined by business unit needs. He introduced shared services into Digital IT operations, which reduced IT costs from 6% of revenues to about 4%. He was comfortable in Digital's consensus culture, which, according to one Digital-Classic[2] IM manager, treated a committee vote of 17 to 1 like a tie:

> Dick was a cerebral type who rarely raised his voice. When he spoke, he usually had something to say. In most cases, Dick would convince you of his position. Only once in 3 years did I see him reverse someone's decision.
>
> *—Rick Fricchione, Vice President,*
> *Advanced Information Technology and Planning*

In contrast, Compaq CIO John White ran a highly centralized, top-down organization in which he was known to make decisions several levels down into the organization. Computer operations and global telecommunications management were Houston-centric. A highly integrated infrastructure ran Compaq's high volume, build-to-stock business, and individual business units had no control over their IT costs. Under White, the IM organization had a 1997 budget less than 2% of sales.[3] White had a preference for speed, which fit well with Compaq's reputation for throwing 100 balls into the air, catching about 80 of them, and then cleaning up on-the-fly.

High-level conversations between senior IM executives at the two firms started soon after the announcement of the acquisition. In early February 1998, four of Digital's senior IM managers went to Compaq's headquarters to lay the groundwork for the eventual integration of their two organizations. Due to legal restrictions on the kinds of information that could be shared, the discussions about existing systems and practices were very high level. In essence, each side shared presentations that they regularly made to customers. The meeting primarily served to help familiarize the two parties:

> I took notes but was told I couldn't share them. So when I came back, a lot of what I shared was "tone"—like what it was like to walk onto their campus. It felt like they were moving 800 miles an hour. They weren't fully staffed a lot of the time, and they were looking for ways to get things done.
>
> *—Technology Manager, Digital*

At a follow-up meeting in late February, a dozen or so of John White's direct reports met with Dick Fishburn and a number of his direct and dotted-line reports. The groups identified 15 key areas that needed to be integrated. They paired counterparts from the two firms' IM functions in these 15 areas to start working on an integration roadmap for both the infrastructure and mission critical applications.

They then mapped out 44 integration initiatives and created teams to work on them. (See Exhibit A-2 for a list of the key areas and initiatives.) Although the focus of the meeting—and the teams—was on technical integration, issues around organizational structure quickly surfaced:

> The first thing that came to everyone's mind was that there was a huge disparity in staffing. Digital was gigantic. John [White] basically said, "You have hundreds of people

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[2] The terms Compaq Classic and Digital Classic were used to signify the pre-merger entities.

[3] The percentage of revenue figures for Compaq and Digital are not totally comparable due to different accounting practices around software and project cost depreciation.

too many in this group." I think Compaq was just overwhelmed by the shear size of the Digital groups.[4]

—*CIO, Tandem*

John White charged the teams with evaluating Compaq's and Digital's systems and processes. They were to present recommendations in May for adopting the Compaq, Digital, or hybrid solution for each major initiative. IM Integration leaders instituted a weekly review process for ensuring that the teams were on track, and the teams worked cooperatively towards their goals. Although Compaq was the acquiring firm, Digital had more human resources to devote to the planning.

Developing an Integrated Infrastructure

Among the 44 IM integration initiatives, management was particularly concerned with those that would establish a common infrastructure. Even before the merger was formalized, the two firms needed an efficient, secure communications channel for exchanging information between them. And soon after the merger, management wanted a technical infrastructure that would allow it to operate as a single company. To this end the IM Integration leaders assigned teams to nine initiatives that they referred to as Phase One —actions that were to be implemented within sixty days after the merger was formally approved. Another 16 initiatives were referred to as Phase Two—planning efforts for post-merger activity. Enterprise Network Integration, Enterprise Application Architecture, and Day One Deployment were examples of Phase One initiatives.

Enterprise Network Integration

Laurence Cranwell, manager of global communications for Digital, headed a team responsible for planning the enterprise network for the combined company. Cranwell's team had the challenge of ensuring that a packet could reach across any part of the existing Digital or Compaq (including Tandem) networks, even if they had different addresses and different architectures. The two companies had different network architectures, products, and protocols. Compaq's network architecture had been developed for a highly centralized operating environment, whereas Digital's Services business required more distributed operations:

> We [Digital] had 400 sites in the U.S. They had ten. That's one thing we worked through as an organization. The stove pipe organization that does technology delivery is okay when you've got very few sites, but when you have many, you need an operating model for 1100 global sites. You can't be there all the time.

—*Laurence Cranwell,*
Director, Communication Technology Information Services

Digital's networking people viewed their responsibility for the global network as an opportunity to do a "green field" design for the future. Both firms' legacy networks had become congested and both were working with carriers to design ATM networks, so these efforts were combined. They would need six months to turn on the green field, but they needed to design the global network in advance of the actual merger. This involved making assumptions about future site locations:

> A lot of the future communications infrastructure would depend on the data center decisions—where they are going to be—and where the transactions are going to take

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[4] Digital had about 3200 people in its IT organization the day of the merger. Compaq had about 1500 IM employees plus 500 contractors. Tandem had a few hundred.

place. Plans also depended on what applications would be selected to go forward, and which plant sites would remain open or closed. Plant closings were very sensitive issues; management didn't want the information to get out and scare people off prematurely, but we needed to know.

> —*Laurence Cranwell*
> *Director, Communication Technology Information Services*

Although the uncertainties created challenges for planning the network, the network team could outline a high-level architecture based on the Board's statement that Digital would be integrated with Compaq. They needed to know less about the structure and operations of the combined firm than the application integration teams would need to know:

> It's really like train tracks. They conform to standards, but the types of trains you can run over the tracks are pretty different. That's where you get a little more disagreement. You don't get into the politics as much about the tracks. You take care of the tracks—make sure I can get from point A to point B—and others worry about which trains, the application level.
>
> —*Ed Furilla, Sales & Marketing IM Manager*

While they planned the new global architecture, Cranwell's team worked to establish temporary linkages across the three entities. Compaq had nine CLASS B internet addresses, and about 80 CLASS C internet addresses.[5] Digital had one large flat address space. Consequently, if Compaq, Digital, and Tandem all had buildings in Munich, consolidating their facilities could result in having 3 people sitting twenty feet apart with 3 different IP address domains supporting them. Until the firm had a new architecture with a single address space, communications between the merged entities had to be transferred through internet mail (i.e. through firewalls) rather than a seamless network. This was both slow and costly:

> The joke was that Compaq paid $9.6B for a CLASS A internet address. The right answer was to redesign the network to move all of Compaq into the CLASS A address that Digital had, and at the same time re-architect.
>
> —*Rick Fricchione, Vice President,*
> *Advanced Information Technology and Planning*

Enterprise Application Architecture

Because Compaq was the acquiring firm, its application systems were the starting point for discussions about which of the two firms' redundant systems they should retain. At the time the merger was announced, both firms were in the third year of SAP R/3 implementations to replace core transaction processing systems for finance, manufacturing, order management, and logistics. Both firms had focused first on European operations because they believed financial returns would be most immediate there. But the two firms had little else in common in their ERP implementations.

Digital was implementing a common, global supply chain system across its business units. It was pursuing a site-by-site implementation managed out of a central program office that leveraged the expertise of about 100 key people across the organization. A key objective of the SAP implementation was to develop consistent business processes and consistent reporting across sites. Digital had allowed

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[5] The CLASS refers to the size of the address space. A CLASS C address space might allow for as few as 256 nodes on a network, while a CLASS B address could allow for 64,000 nodes. Large firms must cobble together their networks using multiple address spaces if they do not have a sufficiently large address space.

just 14 modifications to SAP code. Digital had implemented SAP financials worldwide, standardizing all financial processing such that the way revenue was counted in Asia was the same as in Europe. Following about three false starts, Digital implemented SAP in its European manufacturing operations, and by June 1998 Digital had installed four instances of SAP manufacturing modules, including one US manufacturing site.

Compaq's implementation was managed out of the IM organization. The central team developed a template and each geographic region customized the template to fit local needs. By June 1998, the three-year project had included about 40 small "big bang" implementations with up to 10 projects going on in parallel. In total, it had nine separate instances of SAP. Compaq had relied heavily on Price Waterhouse consultants and had focused on a fast implementation rather than consistency across sites. Compaq had made over 1500 modifications to SAP code as it customized the software to meet the needs of individual sites, plants, and geographies:

> We put stuff in brutally fast. We were almost up 100% on SAP before we bought Digital. We would just go in and make people scream; if the users didn't like it, we told them 'you're going to get it anyway.' Digital was just the opposite: it was very much risk avoidance. They wouldn't go live unless all the issues were resolved, and everybody signed up that it was going to work. When they went live, there was never an issue. Then, again, they had very little SAP up by the time we bought them.
> —*Director, Global Financial Processes*

Having a common software package did not make for an easy integration of the two firms' operating processes. For a variety of reasons, including the fact that Compaq was the acquiring firm and felt that it was further along in its implementations, the SAP team eventually recommended that the firm pattern future implementations after Compaq Classic. A short-term dilemma that arose following the SAP decision was whether to continue with a Digital SAP implementation scheduled for Summer 1998 in Scotland. Despite the stated new direction, the uncertainty of the timing of the merger led to the decision to implement in the Scotland plant as planned.

As part of its SAP implementation, Compaq had completed a two-year rollout of the HR module in March 1998. In contrast, Digital, along with Tandem, had purchased PeopleSoft for its HR systems. Both SAP and PeopleSoft were asked to propose new contracts for the combined firm. Although tempted to push SAP into all of Compaq, the IM and human resource organizations chose to adopt PeopleSoft. This was the first time that Compaq employees had been in a situation where an alliance affected a platform choice:

> PeopleSoft is a business partner. We were looking for an opportunity to expand our relationship with PeopleSoft so that became part of the decision criteria. It was also important that, once the acquisition took place, 70% of our workforce would already be on PeopleSoft.
> —*Ed Pennington, Director, Corporate Administrative Services*

At the time of the PeopleSoft decision, Digital was 80% through its HR implementation. However, the decision was made to scrap this implementation, because it was not consistent with Compaq's processes. The combined firm would start all over again with a PeopleSoft implementation for the new Compaq.

The differences in Compaq's and Digital's approaches to enterprise application implementation were echoed in the differences in the two firms' approaches to enterprise application support. Digital had assigned responsibility for supporting its PeopleSoft implementations—and most of its other global legacy systems—to a large shared services organization called the Production Support Group (PSG). At

the time of the merger the group totaled about 1000 people, and functioned like an in-house outsourcing organization. Digital credited the PSG concept with reducing IT costs and moving spending from operations support to new investment because it forced business unit managers to decide how much support they were willing to pay for.

Compaq located responsibility for global application management within each of the geographies. Some key managers were philosophically opposed to the shared services concept, believing that it introduced unnecessary bureaucracy. Thus, PSG had no counterpart at Compaq and its head was not paired with a Compaq manager for integration planning. The design for legacy systems support defaulted to the Compaq model:

> The key issue is not shared services, but running the corporation in a geo model or a business unit/functional model. Compaq had chosen geography. Once that decision is made, other things come as a result.
>
> —*Rick Fricchione, Vice President,*
> *Advanced Information Technology and Planning*

Day One Deployment

IM managers at the two firms worked closely to ensure some level of IT integration of the two firms as of the day the merger would be approved by the stockholders. Leveraging their experience with the Tandem merger, Compaq executives specified some aggressive Day One goals:

> One of the things done enormously well for the Tandem acquisition was to get the two networks talking within two days. So our goal with Digital was to have this capability on the day the merger was approved. In some of the other systems areas, the need to take immediate action wasn't quite as important. We were able to think about it a little longer.
>
> —*Fred Jones, Vice President, Information Services, Compaq*

In particular, the firms took advantage of the fact that they were both using MS Exchange for email. On Day One a single email directory was available so that employees could easily find and mail messages to their counterparts in the other organization. Firewalls and filters that had been put in place prior to the merger came down to provide open connectivity, with no security holes to the outside world. A coordinated approach to help desk support combined Compaq's help center in Houston and Digital's in New England. And a new external web site put a combined front-end to the two firms' individual sites.

First Day as New Company

The two IS organizations viewed having the new email infrastructure in place on Day One as a collaborative triumph. The integration teamwork had also increased sensitivities to the cultural differences across the two organizations:

> You would hear all kinds of stories like: 'Why do those folks in New England think they have to plan forever? We could have it done before they have a plan.' I heard comments like these in the first two months, but I didn't hear them thereafter. You could almost make these deficiencies something to be proud about on both sides, because if you mixed the two, you'd have planning *and* execution.
>
> —*John Buda, Director, IS Client Management*

In addition, the pre-merger work resulted in some important planning decisions that would guide systems integration in the coming months. However, the Digital IT people who had worked on the integration teams did not know whether they would be tapped to play a major role in the new IM organization or not. Throughout the planning, the fact that leadership was shared by paired teams of IT managers meant that the temporary organization chart effectively had a "two in a box" look that would soon be reduced to one:

> There was plenty of tension, but it wasn't as intense as I would have expected it to be. We worked well together, especially the Information Services group. I think it was because there was compelling work that had to be done. The Day One set of tasks had to happen on schedule.
> —*Fred Jones, Vice President, Information Services, Compaq*

The public documents filed for the merger made it clear that 16,000 jobs would be cut from the new Compaq by the end of 1998, and anxieties were high, especially among those people who had been with the company the longest. The fiscal year for Digital Classic would end June 30 and, due to its strong financial results, the year-end bonus looked attractive. However, to receive the bonus, employees needed to stay with the company until the end of July.

Exhibit A-1

Merger Roles/Responsibilities

Compaq/Digital Executive Committee

Ilene Jacobs - Digital HR

Digital Integration Teams
- Finance/Admin
- IM
- Services
- HR
- Manufacturing
- Sales & Marketing

Mike Baker - Compaq
Tom Weyant - Digital

Integration Coordinator

Hans Gutsch - COMPAQ HR

Compaq Integration Teams
- Finance/Admin
- IM
- Services
- HR
- Manufacturing
- Sales & Marketing

Dick Fishburn - Digital CIO
John White - COMPAQ CIO

Rick Fricchione - Digital
Tom Simmons - Digital
Fred Jones - Compaq
Mike Baker - Compaq

IM Technology & Operations
Integration Teams
    -44 task teams

Digital/Compaq IM Staff Members
With AITP Support

IM Application Integration Teams
    (by aligned IM organization)

Digital/Compaq Integration Coordinator
IM Staff Members plus selected others

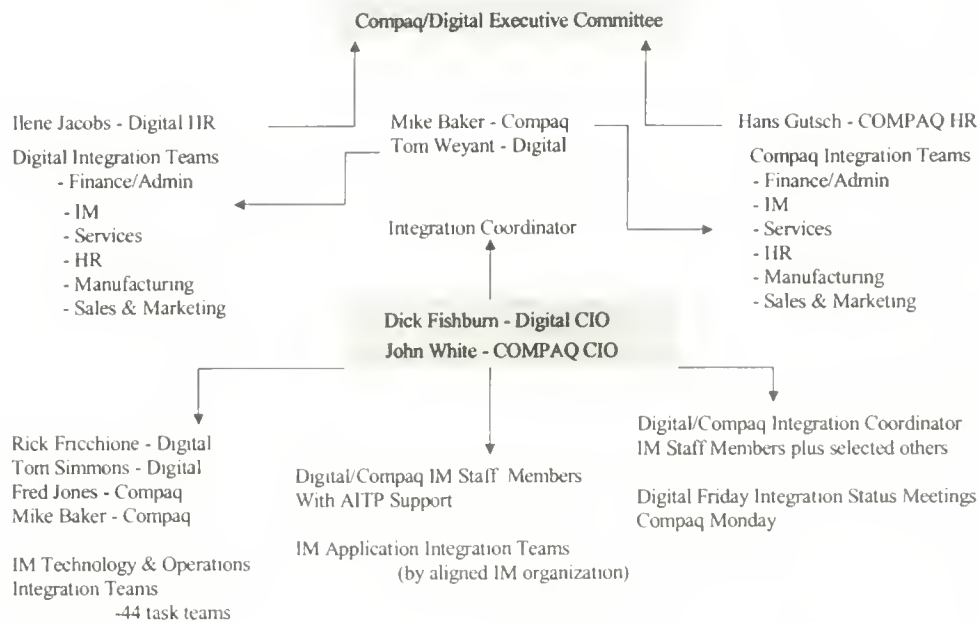Digital Friday Integration Status Meetings
Compaq Monday

Exhibit A-2

IS/IM Integration Teams - Initiatives

- 1. Information Management Vision
- 2. Human Resources IS Workforce
- 3. IS Management Team Exchange
- 4. SAP R/3 Centric Business
- 5. Applications Portfolio
- 6. Intranet/Internet Deployment
- 7. DIGITAL Product and Services Offerings
- 8. Infrastructure Topology
- 9. Start-up Deployment Team
- 10. Mail and Messaging Integration
- 11. NT Infrastructure Integration
- 12. WAN Optimization
- 13. Remote Access
- 14. LAN Strategy
- 15. Enterprise Network Architecture
- 16. Enterprise Management Architecture

- 17. Voice Network
- 18. Internal Equipment Sourcing
- 19. Disaster Recovery Strategies
- 20. IT Metrics
- 21. Technology Integration Checklist
- 22. Data Warehousing/Reporting
- 23. Services Logistics
- 24. Call Management
- 25. Enterprise Architecture for SAP
- 26. Peoplesoft/SAP HR
- 27. Year 2000 Program
- 28. Project Services
- 29. Reference Data Strategy/Management
- 30. Sales Productivity Tools
- 31. High Availability/High Performance Computing

- 32. Operational Processes
- 33. Information Security
- 34. Desktop Support Strategies
- 35. Collaboration and Workflow
- 36. Cost Recovery for IS and Infrastructure Services
- 37. Merged SAP Enterprise Application Architecture
- 38. Alliances and Agreements
- 39. Sales Workbench and Transfer Manager
- 40. Product Management and Development Workbench
- 41. Document Management and Records Retention
- 42. Electronic Document Interchange
- 43. Treasury Management
- 44. Worldwide Trade and Compliance

Merging Information Technology and Cultures at Compaq-Digital (B):
Becoming a Single Firm

In August 1998, within two months of the merger of Compaq Computer Corporation and Digital Equipment Corporation, a new Chief Information Officer, Michael Capellas, was brought on board. Capellas arrived with a track record as an international CIO and recent stints as Director of Supply Chain Management for SAP America and a senior VP within Oracle Corporation. At that time, he was the only senior manager within the newly integrated computer company that had been brought in from the outside.

When Capellas arrived, the basic communications infrastructure, telephone systems, and e-mail were in place, but integration of the daily operations—taking orders, shipping orders, interfacing with customers—was still underway. Nonetheless, within four months after his arrival, Capellas had seen the new company set a world record for the number of units shipped—4.2 million:

> Despite all the problems, we are outperforming the world in volume. At the end of the day, business results are business results. We must be doing something right.
> —*Michael Capellas, Senior Vice President & CIO*[6]

Creating a New Information Management Organization

The new Compaq was a combination of the old Compaq's high-growth personal computer and server businesses with Digital's mid-range computer products and highly profitable services business. According to documents filed with the U.S. Securities and Exchange Commission as part of the merger approval process, the new company was expected to achieve lower operating costs as well as increased revenues from new cross-selling opportunities. Senior management felt pressure to deliver these benefits quickly, and the Information Management (IM) organization's new leader felt accountable:

> In our business IT is not an enabler, it basically *is* the business. If you're not getting orders, you're not shipping product… and the world is ending.
> —*Michael Capellas*

Under its former CIO John White, Compaq had had a highly centralized approach to managing IM. This structure helped the IM organization get things done quickly and kept IT spending significantly below the industry average. Although each of the geographic regions had their own IM support groups, White was tightly linked with Compaq's executive committee and IM strategy and infrastructure standards decisions were all set at the corporate level.

In contrast, under CIO Dick Fishburn, Digital had had a highly decentralized model, with each business having its own CIO. This model gave the distributed manufacturing and services businesses more personal service from their own IS groups, but it was more expensive. It also meant that the business CIOs often went off and did something on their own.

The June 1998 post-merger announcement of the top management team for the new Compaq named White as CIO—but it was well known that White planned to retire sometime before year-end. In fact, the merger integration activities had thrown a 'kink' in the search process for a new CIO and White had signed an extension to his contract. The agreement was that he would stay on until a replacement was

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[6] The interviews for this case study are based on on-site interviews between December 1998 and February 1999.

found and the merger activities had settled down a bit. This left plans for the new IM organization 'in limbo' over the summer months.

> Everyone was concerned about 'where do I fit on the org chart.' That's what they really wanted to hear. So until we could actually tell them that, we gave them a lot about how the business is coming together, what other organizations at Compaq were doing, and where we were on our plans.
>
> *—Laurence Cranwell, Director,*
> *Communication Technology Information Services*

The new senior IM management team was named by White just one week before he retired in August 1998. Thus, when Capellas arrived from Oracle Corporation to head up the combined IM organization, he inherited a new management team that had not yet sorted out lower level reporting structures.

White chose primarily Compaq Classic managers for his senior management team, but as Capellas filled in the organization chart (see Exhibit B-1), it became clear that IM management at Compaq would no longer be so tightly controlled from Houston. Rick Fricchione, for example, was an ex-Digital manager who was tapped to be Vice President, Advanced Information Technology and Planning, and Capellas had agreed that Fricchione could fill the role from Massachusetts. Similarly, Fred Jones, a Compaq Classic manager who assumed global responsibilities for technology and process, had five former Digital managers among his eight direct reports. Only two of the five had plans to relocate to Houston. Laurence Cranwell, one of Jones' direct reports based in New England, managed a team split about 50/50 between Compaq Classic and Digital Classic.

While Compaq Classic managers lamented the increased complexity that accompanied a more distributed IM management model, they acknowledged that, in a very tight IT labor market, Houston alone could not provide sufficient IT resources for a $40 billion firm. They wanted to take advantage of the fact that Compaq's two key acquisitions were in high tech corridors. The 1997 Tandem acquisition gave Compaq a hook into the Silicon Valley, and the 1998 Digital merger gave it a hook into the Boston corridor and Route 128.

Adding to the complexity was the recognition that Compaq's newly acquired Services business had different IM support needs than the manufacturing business. CEO Pfeiffer had kept the leadership for the Services business in Massachusetts, reporting to both the CEO and the geographies. The Senior VP of Services John Rando had been a key player in the strategy discussions during the pre-merger integration process, and Rando became a member of the new Compaq's top management team as soon as the merger was finalized. The IM roadmap for Services mirrored this structure. Mike Whitney, the former CIO for the Digital Services group, reported to Rando, and the IM teams working on worldwide and functional systems solutions for Services reported to Whitney. The IM heads working in each of the geographical Services units now had a dual reporting relationship to Whitney and to their local Services head:

> On Capellas' new organization chart, I'm the only person who is shown with a dotted line; everybody else is a solid line. Services makes a large percentage of the profit of the company. But it's difficult in terms of being remote from Houston and there's still concern on how well Services is perceived as integrating into the rest of the company.
>
> *—Michael Whitney, CIO, Compaq Services*

While Houston IM managers were adjusting to the challenge of managing a distributed work force, those former Digital managers who had decided not to relocate to Houston had to learn when they could rely on e-mail and video-conferencing and when they needed to be in Houston. They knew that they needed to

interact with other IM and business managers in order to build good working relationships, and they had to periodically be part of the action in Houston in order to influence decisions:

> Things can happen so fast, that if you're not in the middle of the floor, you're out of the decision process. The remote manager suffers a little from out-of-sight, out-of-mind, because it's been the mentality of the company.
>
> —*Michael Capellas, Senior Vice President & CIO*

Working Toward Process Integration

In order to achieve the objectives of the merger, senior management felt that process integration was critical. Immediately following the merger, a customer who wanted to buy Compaq, Tandem, and Digital products would have to submit three separate orders and later process three separate invoices. Compaq worked to provide a single customer interface within a couple months of the merger, but real process integration would take some time:

> The company had done a pretty solid job of merging the sales force, but the infrastructure was not in place to [enable all salespeople to sell all Compaq products]. The order fulfillment model still had a long way to go; it was just in its infancy. Finance was getting the books closed, but with some brute force.
>
> —*Michael Capellas*

Ultimately, management wanted an integrated supply chain across the three entities. The business vision was that a customer could call Compaq and order three DEC Alpha's, two Tandem Himalayas, and 10,000 Compaq PCs on one purchase order. The order would be reflected as one entry in Compaq's systems and would arrive at the customer's location all at one time. To achieve this level of integration, management had to (1) reconcile business model incompatibilities among the separate entities, and (2) implement integrated systems to support those enterprise-wide processes that defined the new Compaq. Management coined the term OnePaq for this integration effort. (See Exhibit B-2.)

Reconciling Different Business Models

Compaq's core business processes supported large manufacturing volumes—as many as 20,000 PCs in a day in a single plant, which was more than Digital manufactured in all its plants in a week. Digital's business model, on the other hand, supported direct-to-customer sales and support of smaller numbers of PCs (up to 3000 per day) and customized mini and mainframe systems. Compaq had acquired Digital specifically because of its Services business, but the opportunities it presented and the challenges of integrating services into supply chain, customer facing, and e-business processes were not well understood.

The Services business negotiated high-end systems contracts directly with enterprise customers. Compaq Classic had not sold services. Its services unit had included a help desk, repair center, and spare parts shipping for its products. Rather than deal with end users, Compaq supported its channel partners who supported Compaq's customers. In contrast, Digital had serviced its own systems and that of its competitors. In addition, Digital had sold systems integration services, while Compaq had regularly used the services of systems integrators like Andersen Consulting and PricewaterhouseCoopers. These very different business models made for an uneasy transition following the merger. Some Compaq Classic managers sensed that Digital's willingness to service competitors' equipment compromised potential Compaq sales, while former Digital managers were wary of the impact of Compaq's alliances with competing service providers on Service unit revenues.

Ultimately, Compaq Service engagements that involved implementing systems like SAP, Siebel, or e-business applications would "pull" Compaq hardware sales. Similarly, hardware sales were expected to lead to Services revenues. Because of the differences in old business models and systems, however, Whitney anticipated that it would take some time to see synergies from the merger of the Compaq, Digital and Tandem Services units. The integration would involve a global portfolio mapping of all Compaq services across the world and the implementation of the SAP baseline to support them.

An early initiative immediately following the merger was a Web-based front-end for on-line orders via the Internet. This, of course, did not clean up the back-end systems. One Vice President noted that the new front-end was like "putting lipstick on a pig." But the web-based front-end was important for moving Compaq Services into the Internet space:

> The Internet world sort of changes the spin on how you want to deliver services. For the small-medium business environment, more than likely we'll look at a lot of Webbing and a lot of the Compaq Classic stuff, because we can't afford $100-200K service centers. But the time that it's going to take to integrate all the call-handling, all the sales and marketing, is nowhere near the speed that the business wants to go.
> —*Michael Whitney, CIO, Compaq Services*

The growing importance of e-business exacerbated the organizational challenges associated with the merger:

> The whole world of e-commerce came to this industry before it came to other industries. We're growing while business models are changing on top of us. Anything we build now we know is wrong. You never have your feet on the ground. What internet technology does to the world is that you're in a continual state of aggregation and disaggregation. You're constantly putting stuff together and taking it apart.
> —*Michael Capellas, Senior Vice President & CIO*

Implementing Enterprise Systems

Enterprise systems implementation embodied two different challenges. One was to redefine the new firm's business processes. The other was to effectively manage ERP implementation projects in a large, complex, constantly changing organization.

Prior to the merger, Compaq had total world-wide supply chain planning running on custom systems. Except in the US, this had tied into SAP for order management. IM did not immediately attempt to install these systems at Digital facilities, because supply chain planning would be very much affected by the firm's reorganization. From June to November 1998, the firm was shutting down plants, laying off people, and consolidating operations. Thus, prior to November 1998, there was little progress in integrating the supply chain across former Tandem, Digital, and Compaq sites. Ultimately, management had to decide the extent to which the supply chain could be standardized across geographies and product lines:

> In any of these large ERP projects, if you can answer 'how common is common,' you'll get it right. I've never seen anybody do it gracefully or painlessly. It's a very, very difficult question—and it's much broader than IM. It's the whole world of management in the 90s. Technology is allowing you to make more things common than you used to; but on the other hand, the flexibility of that technology is also giving capabilities at the

local level to people that never had it before. So it's a difficult balance of technology, management style, and just pure efficiency.

—Michael Capellas, Senior Vice President & CIO

In addition to supply chain differences, there were significant differences in the firms' financial closing and forecasting processes. For example, both Compaq and Digital used Hyperion systems for financial consolidation. However, Digital did the currency translation at the transaction level and then fed transaction data into Hyperion in U.S. dollars prior to doing cost allocations. Compaq did all of its cost allocations and liquidations inside its new SAP system and then sent the transactions in local currencies into Hyperion where they were translated. In addition, they took different approaches to foreign currency translation. Digital translated monthly results while Compaq translated each transaction.

> How we run our closes between Compaq and Digital Classic are very dissimilar. That doesn't mean one is right or one is wrong, it's just that two companies have chosen to do it two different ways. Basically, when you look at our systems, the only thing similar is they're made by the same vendor.
>
> *—Director, Global Financial Processes*

Once the two entities moved to a common ledger system using a Compaq SAP baseline, they would have common allocation schemes, common reporting schemes, and common data. Even before formal approval of the merger, the integration team had decided to accept the Compaq SAP baseline to accomplish this financial and supply chain integration:

> We had really built a much higher volume, high speed environment [at Compaq]. We thought it would be much easier to add the complexity to the high volume than to add the high volume to the complexity.
>
> *—SAP Project Manager*

The Services side of the business had some unique requirements that were not incorporated in the Compaq baseline. For example, Services needed the project accounting module in SAP in order to determine profitability and margins by work breakdown element. The integration team had intended to adopt Compaq Classic's SAP rapid implementation approach. However, the gradual recognition of the unique needs of the Services and direct sales organizations greatly increased the complexity of the implementation:

> It's a new world for Compaq. The old way we used to do it, when we were growing fast and furious, was that IM would race around and bring up SAP in big bang swoops on a Compaq Classic model, which was basically building PCs. Now, there's this giant Services arm, we have Tandem which builds giant PCs that can take a year to sell. We're getting too big for that now.
>
> *—Director, Global Financial Processes*

OnePaq 1A was originally intended to be simple product order integration, but it eventually grew into a new corporate CTO (configure-to-order) initiative. Over time, the project plan evolved to include about 150 projects to be implemented in seven phases under OnePaq program managers in each geographic region. Compaq, which had traditionally defined systems projects that could be completed in three to six months, found itself constantly confronting scope creep:

> It got too big. We had master data issues. We also had to learn how Services was doing things because we had never had a Services group. We couldn't do it. Basically, we fell back to breaking up the project into smaller projects. In manufacturing, we're doing a

phased implementation. IM gets the nasty job of saying, 'how do I phase all of this into some sort of project schedule with resource constraints, cash, and all that?'

—Director, Global Financial Processes

Meeting the Headcount Reduction Targets

At the same time that OnePaq implementations were getting underway, another challenge for the new IM organization had to be tackled: meeting the headcount reductions filed with the SEC as part of the cost savings rationalization for the merger. Achieving the quotas was a non-negotiable issue, and funds had been put aside for termination packages. When Capellas arrived in August 1998, the 'clock was already ticking' but decisions about the downsizing targets for specific IM units had been delayed until his arrival.

Most IT groups were given an 18% target, but a portion of the quotas would be met by attrition. Many experienced Digital managers—including the Digital CIO and eight other managers who had carried a CIO or vice president title in the Digital IS organization—had left the company before Capellas' appointment was announced. Additional 'cream of the crop' employees left before the layoffs began:

> As Digital had gone through rounds of cost cutting and facility closings it was not unusual to have one or two really good people working from home in a particular area. Eventually this grew to a work-at-home program with hundreds of people (at least 100 in IS) participating. At the time of the merger, these people were viewed as a problem and the directive went out to either bring them into a Compaq office or lay them off. What many saw as progressive work practices at Digital were being eliminated. Hundreds left the company over this one alone.
>
> *—Rick Fricchione, Vice President*
> *Advanced Information Technology and Planning*

When Capellas arrived in August, overall attrition rates were quite high. At one point 'sharks' from a major IT consulting firm had camped outside of the Digital offices in recruiting vans:

> You take a very hot area like IT where the job market is on fire. You compound it with an equally red hot market like SAP. Put it together with the uncertainty of an acquisition, and you will get attrition. It was also fairly clear that the new Compaq was going to be based in Texas, and the thought of becoming cowboys was not always that appealing to those long-established Bostonians.
>
> *—Michael Capellas, Senior Vice President & CIO*

A snag in the downsizing process was caused by delays in the European union negotiations. Late in 1998, it became clear that it would be impossible to meet the European targets for that year. The U.S. groups were told to increase their 1998 layoffs. Although this meant that the U.S. targets for 1999 would be lowered when layoffs in Europe became possible, it impacted credibility and morale within IM:

> We ended up—after many of us had told everybody 'that was it'—having to go back and do another [round of layoffs]. That last one in December was pretty brutal. It had big morale issues. We had said we were done.
>
> *—SAP Project Director*

The staff reductions, coupled with accelerating demands for data integration, e-commerce capabilities, and enterprise systems support, forced constant focus on attacking only the highest IM priorities.

Transforming the Firm

As the last year of the century began, Compaq's logo was appearing on Digital buildings in New England, and the re-badging of Digital Classic people was underway. IM management noted that some pieces of the IM integration were clear from the outset; others were evolving on a daily basis. In particular, IM's role was increasingly focused on enabling Compaq to transform itself from a build-to-stock to a configure-to-order model as the firm moved aggressively into e-business:

> We anticipated some of the ways that the new business would be put together, but some of the pieces were put together differently than we expected. The maturity of e-business and Web-based business all happened in the same time frame. The business priorities turned 180 degrees during the integration process. The Web project was always on the roadmap, but the urgency changed significantly during the first nine months of integration.
>
> —*Fred Jones, Vice President, Information Services*

By early 1999, management recognized that the OnePaq initiative would not meet its initial targets, and management established new SAP target implementation dates for the next four quarters. These included merging general ledgers in Q2 of 1999; consolidating order management (in part) in Q3; integrating manufacturing in Q4 of 1999 and Q1 of 2000; and systems integration of the Services business in Q2 of 2000. The OnePaq initiatives were critical for addressing the goals for the merger as filed with the SEC, as well as for enabling Compaq to compete in an e-business world.

Epilogue

In July 1999 Michael Capellas, Compaq's CIO, was appointed CEO. At that time, Compaq's revenues were stagnating and the firm had not yet realized the anticipated cost savings from the merger. By September 2000, Compaq's revenues had rebounded and operating costs were on the decline. Compaq reported net income of $712 million for the first two quarters of 2000 on revenues of $19.6 billion, as compared with net income of $97 million on $18.8 billion in revenues for the year-earlier period. In addition, Compaq was generating $6 million in daily sales through its website and about $50 million in daily sales through EDI.

Compaq's IM unit delivered GlobalNet in mid-1999, fulfilling the green field vision established prior to the merger. In practice no one in the Compaq organization would be more than "two hops from the backbone," and the network had universal remote access. This design provided better bandwidth usage, which meant that Compaq could spend its dollars on the routing architecture rather than bandwidth. Bob Napier was brought in from GM Delphi to take the CIO role. He, in turn, placed CIOs in each of the business units, creating a federated IM structure for the new Compaq.

Capellas reorganized Compaq around global business units: consumer, commercial pc's, storage, industry standard servers, business critical servers, professional services, and customer services. Each business unit appointed a vice president for key processes such as supply chain. The services unit was originally grouped with enterprise computing, but sales languished and Compaq lost ground to IBM. Eventually Capellas moved to a direct sales force rather than channel partners and he joined services with direct sales to better serve the needs of large corporate customers. The resulting organization was one that was prepared to be a total enterprise player.
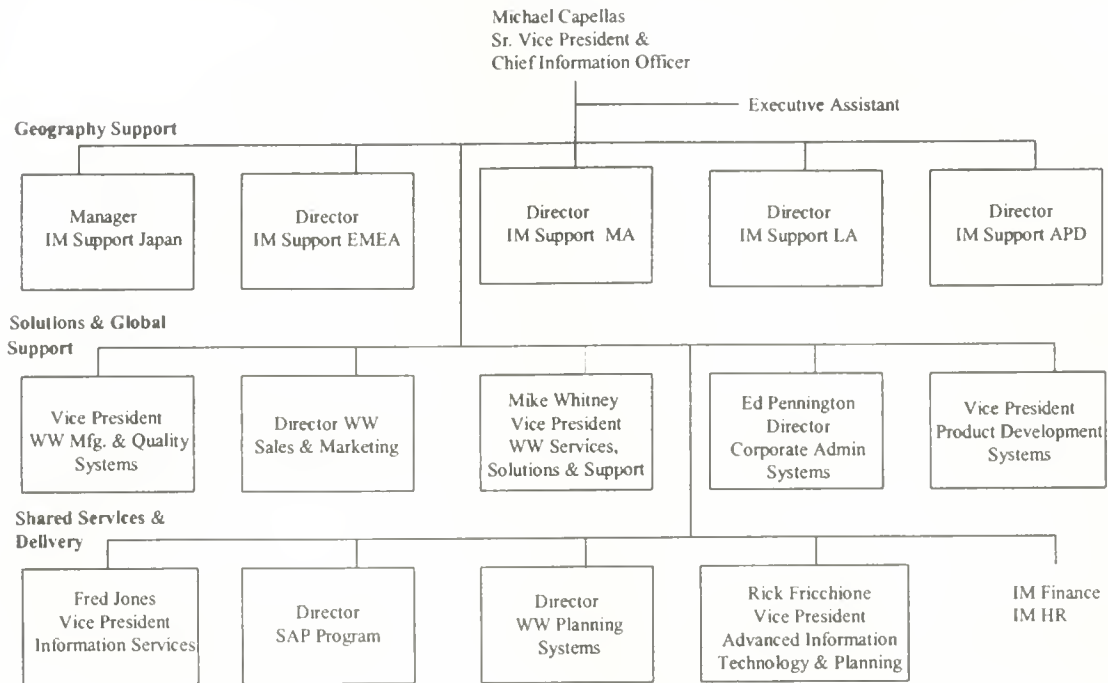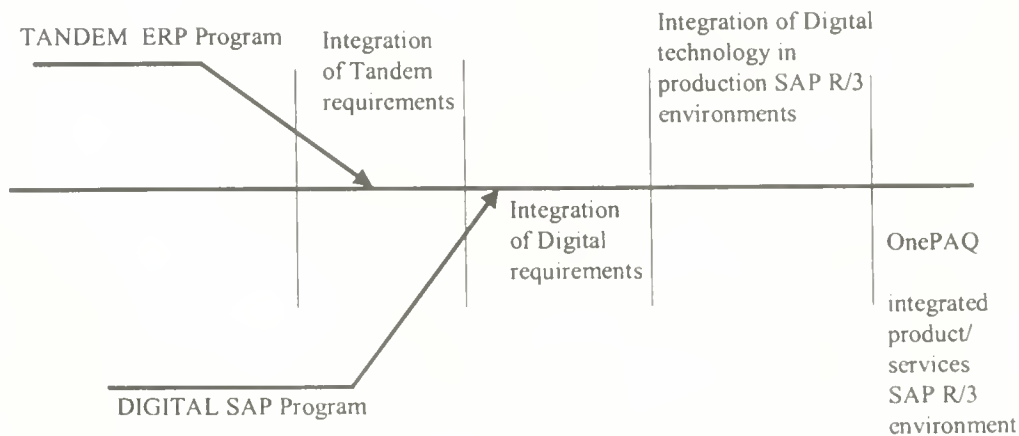
Exhibit B-1

Compaq Information Management

Michael Capellas
Sr. Vice President &
Chief Information Officer

—————— Executive Assistant

Geography Support

| Manager IM Support Japan | Director IM Support EMEA | Director IM Support MA | Director IM Support LA | Director IM Support APD |

Solutions & Global Support

| Vice President WW Mfg. & Quality Systems | Director WW Sales & Marketing | Mike Whitney Vice President WW Services, Solutions & Support | Ed Pennington Director Corporate Admin Systems | Vice President Product Development Systems |

Shared Services & Delivery

| Fred Jones Vice President Information Services | Director SAP Program | Director WW Planning Systems | Rick Fricchione Vice President Advanced Information Technology & Planning | IM Finance IM HR |

Exhibit B-2

The OnePAQ Road Map

TANDEM ERP Program

Integration of Tandem requirements

Integration of Digital technology in production SAP R/3 environments

Integration of Digital requirements

OnePAQ

integrated product/ services SAP R/3 environment

DIGITAL SAP Program

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